

REMARKS

In the Office Action mailed December 10, 2007, the Examiner noted that claims 1-5, 7-16, 18 and 19 were pending, that claims 3-5, 7-14, 16 and 19 are allowed, and rejected claims 1, 2, 15 and 18. Claims 1, 15 and 18 have been amended, no claims have been canceled, new claim 21 has been added; and, thus, in view of the foregoing claims 1-5, 7-16, 18-19 and 21 remain pending for reconsideration which is requested. No new matter is believed to have been added. The Examiner's rejections are respectfully traversed below.

Rejection under 35 U.S.C. § 102

In item 5 on page 2 of the Office Action, claims 1, 2, 15 and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Xiao-guang Lv Jie Zhou Chang-Shui Zhang, ("A Novel Algorithm for Rotated Human Face Detection, hereinafter "LV").

Claim 1 has the effect of reducing the processing time to detect an orientation of a face by deriving a graph showing values of the added pixel data along the horizontal direction by adding the respective pixel data aligned in the vertical direction of the image data (see Fig 3B, of Application.

Therefore, claim 1 has been amended to recite "deriving a graph showing values of summation of the pixel data, which are calculated by adding the respective pixel data in the vertical direction of the image data, along the horizontal direction".

However, it is submitted that Lv does not teach or suggest at least the above-mentioned features recited in claim 1. Rather, Lv describes detecting human faces rotated within an image plane by constructing a histogram $H(\alpha)$ of an image using local orientation analysis (see Lv, Abstract, first 4 lines). Specifically, the histogram is used to analyze the distribution of orientations (see Lv, Section 2.2. Statistical Analysis of Orientation, page 2). The histogram $H(\alpha)$ described in Lv *represents the anisotropic strength along the orientation α* , whereas, in claim 1 "the respective pixel data in the vertical directions of the image data" are added to "*deriv[e] a graph showing values of summation of the pixel data ... along the horizontal direction*". Lv does not teach or suggest such features because Lv is merely concerned with constructing a histogram $H(\alpha)$ representing the anisotropic strength along the orientation α rather than "deriving a graph showing the summation pixel data ... along the horizontal direction" as in claim 1.

Therefore, it is submitted claim 1 is patentable over the cited reference.

Claims 15 and 18 have been similarly amended as claim 1. Thus, claims 15 and 18 are patentable over the cited reference for reasons similar to those discussed above with respect to claim 1.

Further, the dependent claim 2 is patentable over the cited reference for at least the same reasons as base claim 1.

Accordingly, withdrawal of the rejection is respectfully requested.

New Claim

New claim 21 has been added to recite

adding pixel data aligned next to each other in a vertical direction of an image frame to create a graph that shows values of the added pixel data along a horizontal direction; and

determining an orientation of a face based on the created graph.

(claim 21, lines 2-4), which is supported by the embodiments of the invention at page 22, line 13 to page 23, line 17 of the Application. It is submitted that the cited reference fails to teach or suggest the above-mentioned features in claim 21. Particularly, the feature of "adding pixel data aligned next to each other in a vertical direction of an image frame to create a graph that shows values of the added pixel data along a horizontal direction" is not taught or suggest by the cited reference. Therefore, it is submitted that new claim 21 is patentable over the cited reference.

Summary

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. Further, all pending claims patentably distinguish over the prior art. There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.


Serial No. 10/763,185

If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

Respectfully submitted,

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